Tactile feedback on a flexible stylus

Duration: 6 months

Team: Loki (Inria Lille – Nord Europe & CRISTAl) & CIL (Carleton University)

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Ph.D. offer possible

Description

Research in Human-Computer Interaction (HCI) constantly explore new input and output modalities. Flexible devices offer a new continuous input modality. Previous research explored new gestures [4], new sensor technologies, new form factors [1] or new output modalities to give more control on this new degree of freedom [2]. The objective of this internship is to continue these efforts in order to get this technology closer to consumer electronics.

In this internship we would like to add tactile feedback to a digital pen, which uses curvature as an extra degree of freedom. Indeed, immediate feedback is an essential property of direct manipulation, which favors usability [3].

The intern’s work will consist in:

- Studying related work on direct manipulation, flexible devices and the sensorimotor loop.
- Finalize the design and implement the flexible stylus with tactile feedback.

Required skills

The ideal candidate is a MSc student or equivalent with a major in computer science, and shows a great interest in HCI research. He must have experience or a strong interest in software and hardware development. Creativity, independence, team work as well as great communication skills are valuable advantages.

Working environment

The internship will be carried out in either of these two locations. If the candidate is living in France and would like to perform the internship in Canada, or the inverse, we will apply for a MITACS grant.

- The Loki team in Lille, France, joint between Inria – Lille Nord Europe and the CRISTAl (UMR CNRS 9189) laboratory of the University of Lille. Supervisors: Thomas Pietrzak and Stéphane Huot.
- The CIL laboratory in Ottawa, Canada, from the CSIT department of the Carleton University. Supervisor: Audrey Girouard.

Bibliography